REMARKS

It is respectfully submitted that the present response presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the following remarks is requested.

I. The Rejection of Claims 18-28 under 35 U.S.C. 102(b) and/or 103(a)

Claims 18-28 stand rejected under 35 U.S.C. 102(b) as allegedly anticipated by, or, in the alternative, under 35 U.S.C. 103(a) as obvious over Picon et al., Biotechnology Letters 19(4) pp. 345-348 (1997) ("Picon et al"). The Examiner states that Picon et al. teach a process for producing cheese (e.g., Manchego) comprising addition of phospholipase C in the amounts claimed to a conventional cheese making process. Picon et al. also teach cow's milk as an option. The Examiner states that:

> The claims appear to differ as to the specific recitation of purified phospholipase and a decrease in oiling-off.
>
> Purification of phospholipase and a decrease in oiling-off would be no more than inherent and/or obvious to that of Picon et al as the same components and process steps are used to obtain the same final product.

This rejection is respectfully traversed.

Claims 18-28, as embodied by independent claim 18, are directed to a process for producing cheese comprising adding to cheese milk, or a fraction of cheese milk, a purified phospholipase which is a phospholipase C *in an amount effective to decrease the oiling-off effect in cheese and/or to increase cheese yield*; and producing cheese from the cheese milk.

In contrast, Picon et al. discloses the addition of encapsulated proteinase and phospholipase C to ewe's milk in a method for manufacturing Manchego cheese. Picon et al., Abstract. The proteinases are added to shorten the maturation period of the cheese. Id., p. 345, column 1, paragraph 1. Picon et al. explains that proteinase can advantageously be encapsulated in liposomes before being added to the cheese to minimize the loss of protein in whey caused by early protein degradation. Id. But the enzymatic activity of some proteinases may be hindered by the short period of time elapsing since they are released from the liposomes until cheese pH and temperature fall to values at which the proteolytic activity is considerably reduced. Id. To accelerate release of the proteinase from the liposomes, stimulated release liposomes were developed by co-encapsulating the proteinase with a phospholipase. Id., column 1, paragraph 2. This resulted in enhanced casein degradation in the milk. Id. The skilled person would know that

enhanced casein degradation in the milk results in increased loss of milk protein in the whey and therefore in *reduced cheese yield*, in contrast with Applicants' claims, which provide addition of phospholipase C *in an amount effective to decrease the oiling-off effect in cheese and/or to increase cheese yield*.

For example, the authors of Picon in a previous publication (Picon et al., Biotechnology Letters 17(10) pp. 1051-1056 (1995) (hereinafter "Picon2")) have compared casein degradation in milk when incubated with proteinase encapsulated with or without phospholipase C. Picon2, p. 1051, Summary and p. 1052, Preparation of liposomes. Table 2 of Picon2 shows a higher casein degradation with triggered liposomes, i.e. liposomes with phospholipase, as opposed to conventional liposomes made in the same way but without phospholipase. Thus, *the addition of phospholipase to the cheese milk in the method of Picon will result in higher casein degradation and therefore reduced cheese yield*. Accordingly, Picon teaches away from the present invention.

For at least these reasons, Picon et al. does not teach or suggest a process for producing cheese comprising adding to cheese milk, or a fraction of cheese milk, a purified phospholipase which is a phospholipase C *in an amount effective to decrease the oiling-off effect in cheese and/or to increase cheese yield*; and producing cheese from the cheese milk. Applicants therefore respectfully submit that the amended claims are novel and non-obvious.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 102 and/or 103. Applicants respectfully request reconsideration and withdrawal of the rejection.

II. The Rejection of Claims 29-41 under 35 U.S.C. 103(a)

Claims 29-41 stand rejected under 35 U.S.C. 103(a) as allegedly obvious over Picon et al. in view of Shipe et al., J. Dairy Sci., Vol. 58, No. 8 (1974) ("Shipe et al."). The Examiner cites Picon et al. as above. The Examiner states that Shipe et al. discloses treatment of milk with phospholipase C and D. The Examiner contends that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use phospholipase D in that of Picon et al. because the use of phospholipase D in the treatment of dairy products is conventional in the art. This rejection is respectfully traversed.

Claims 29-41, as embodied by independent claim 29, are directed to a process for producing cheese comprising adding to cheese milk, or a fraction of cheese milk, a purified phospholipase selected from the group consisting of phospholipase D, and a combination of phospholipase C and phospholipase D; and producing cheese from the cheese milk.

In contrast, Picon et al. discloses the addition of encapsulated proteinase and phospholipase C to ewe's milk in a method for manufacturing Manchego cheese. Picon et al., Abstract. The proteinases are added to shorten the maturation period of the cheese. Id., p. 345, column 1, paragraph 1. Picon et al. explains that proteinase can advantageously be encapsulated in liposomes before being added to the cheese to minimize the loss of protein in whey caused by early protein degradation. Id. But the enzymatic activity of some proteinases may be hindered by the short period of time elapsing since they are released from the liposomes until cheese pH and temperature fall to values at which the proteolytic activity is considerably reduced. Id. To accelerate release of the proteinase from the liposomes, stimulated release liposomes were developed by co-encapsulating the proteinase with a phospholipase. Id., column 1, paragraph 2. This resulted in enhanced casein degradation in the milk. Id. The skilled person would know that enhanced casein degradation in the milk results in increased loss of milk protein in the whey and therefore in *reduced cheese yield*.

For example, the authors of Picon in Picon2 have compared casein degradation in milk when incubated with proteinase encapsulated with or without phospholipase C. Picon2, p. 1051, Summary and p. 1052, Preparation of liposomes. Table 2 of Picon2 shows a higher casein degradation with triggered liposomes, i.e. liposomes with phospholipase, as opposed to conventional liposomes made in the same way but without phospholipase. Thus, *the addition of phospholipase to the cheese milk in the method of Picon will result in higher casein degradation and therefore reduced cheese yield*.

As the Examiner implicitly acknowledges, Picon et al. is silent regarding the treatment of phospholipase D, let alone the particular treatment conditions according to the claims. Moreover, one of skill in the art, taking the teachings of Picon as resulting in higher casein degradation and therefore reduced cheese yield, would not have been motivated to combine Picon et al. with the Shipe et al. reference regarding treatment of milk with phospholipase C and D to arrive at the claimed invention.

For at least these reasons, Picon et al. in combination with Shipe et al. does not teach or suggest the pending claims. Applicants therefore respectfully submit that the amended claims are non-obvious.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 103(a). Applicants respectfully request reconsideration and withdrawal of the rejection.

III. Conclusion

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

All required fees were charged to Novozymes North America, Inc.'s Deposit Account No. 50-1701 at the time of electronic filing. The USPTO is authorized to charge this Deposit Account should any additional fees be due.

Respectfully submitted,

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